In the Claims:

1. (Withdrawn)

2. (Withdrawn)

3. (Withdrawn)

4. (Withdrawn)

5. (Withdrawn)

6. (Withdrawn)

7. (Withdrawn)

8. (Withdrawn)

9. (Withdrawn)

10. (Withdrawn)

11. (Currently Amended) A method for environmental and industrial sampling of airborne target material, comprising: providing a quantity of an aerogel absorbate, crushing the aerogel absorbate, exposing the crushed aerogel absorbate to an airborne material for collecting a sample thereof, removing the collected sample, and analyzing the collected sample by ~~at least one of~~:

a) observing a color change in the aerogel absorbate; and

b) detecting the airborne material by GC/ MS.

12. (Previously Presented) The method of Claim 11, additionally including forming the aerogel absorbate so as to contain chemically specific adsorbing chemistries.

13. (Previously Presented) The method of Claim 11, additionally including containing the aerogel absorbate in an open ended container prior to exposing the aerogel absorbate to an airborne material.

14. (Previously Presented) The method of Claim 13, wherein containing the aerogel absorbate is carried out so as to form a low volume or a high volume sampler.

15. (Previously Presented) The method of Claim 11, wherein removing the collected sample is carried out by heating the aerogel adsorbate to a temperature below the melting point of the aerogel causing the collected sample to be released, and collecting the released sample.

16. (Previously Presented) The method of Claim 11, wherein removing the collected sample is carried out by dissolving the aerogel adsorbate in a solution, removing the solution, and retaining the collected sample.

17. (Previously Presented) The method of Claim 16, wherein removing the solution is carried out by a filtering operation.

18. (Previously Presented) The method of Claim 11, wherein removing the collected sample is carried out by a method selected from the group consisting of thermal release and liquid dissolving/filtering operations.

19. (Previously Presented) The method of Claim 11, wherein providing the quantity of aerogel absorbate, is carried out by selecting an aerogel absorbate from the group consisting of aerogels having chemically specific absorbing chemistries, and aerogels treated or impregnated with material for adsorbing specific target compounds.

20. (Previously Presented) The method of Claim 11, wherein the aerogel adsorbate further comprises glass fibers.

21. (Previously Presented) The method of Claim 20, wherein the glass fibers have diameters between about 0.2μm and about 1.0μm.

22. (Previously Presented) The method of Claim 11, wherein the aerogel adsorbate further comprises being impregnated with a metal.

23. (Previously Presented) The improvement of Claim 11, wherein the aerogel adsorbate has a surface area ranging between about $300m^2/g$ and about 1100 m^2/g.

24. (Previously Presented) The improvement of Claim 11, wherein the aerogel adsorbate has a density in the range between about 0.003 g/cm^3 and about 0.7 g/cm^3.

25. (Previously Presented) The method of Claim 11, wherein the crushed aerogel absorbate comprises at least one aerogel absorbate selected from chemically treated silica aerogels, untreated inorganic aerogels, metal impregnated silica aerogels, metal oxide-silica aerogels, and pure metal oxide aerogels.